
2. Introduction and Specification

2-1. Introduction

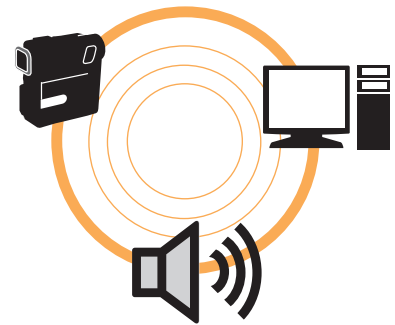
High Performance Note PC

- High Performance with Intel Core 2 Duo / Celeron Processor and DDR III Memory
- Intel Turbo Memory (Option)
- Fingerprint recognition (Optional), TPM(Trusted Platform Module) (Optional)
- Wireless LAN (Optional), Bluetooth (Optional)



Convenient Function

- Camera Module Installed (Optional)



Prudent Design for easy use.

- Various shortcut keys on the keyboard
- Multi-card slot
- Luxurious design with increased usability



2. Introduction and Specification

2-2. Specification

| Processor and Motherboard | Description |
|----------------------------------|---|
| Processor | Intel® Core™2 Duo Processor T9600 (2.8 GHz, 1066 MHz, 6 MB, 35 W) Intel® Core™2 Duo Processor T9400 (2.53 GHz, 1066 MHz, 6 MB, 35 W) Intel® Core™2 Duo Processor P9500 (2.53 GHz, 1066 MHz, 6 MB, 25 W) Intel® Core™2 Duo Processor P8600 (2.4 GHz, 1066 MHz, 3 MB, 25 W) Intel® Core™2 Duo Processor P8400 (2.26 GHz, 1066 MHz, 3 MB, 25 W) Intel® Core™2 Duo Processor P7350 (2.00 GHz, 1066 MHz, 3 MB, 25 W, Tj) Intel® Core™2 Duo Processor T5870 (2.00 GHz, 800 MHz, 2 MB, 35 W) Intel® Core™2 Duo Processor T5670 (1.8 GHz, 800 MHz, 2 MB, 35 W) |
| Chipset (MCH + ICH) | Intel PM45 + ICH9M, GM45 + ICH9M, PM45 + ICH9ME, GM45 + ICH9ME |
| Memory | |
| Memory capacity | Min. 1 GB ~ Max. 4 GB |
| Memory type | DDR3 (1066MHz) |
| Memory modules | 1 GB SODIMM |
| Sockets | 2-slot SODIMMs |
| Display | |
| LCD 1 | 15.4" WSXGA+ Non Glare |
| Vendor | Samsung LCD |
| Resolution | 1,680 x 1050 pixel |
| Colors | 262,144 colors |
| Viewing angle | Left 65° / Right 65° / Up 50° / Down 50° |
| Dot pitch | 0.1972 x 0.1972mm (Horizontal x Vertical) |
| Contrast ratio | Typical 300 CR |
| Brightness | Typical 200 cd/m2 |
| Response time | Typical 16 ms / max.25 ms |
| Polarizer | Non Glare |
| Weight | Max. 590 g |
| LCD 2 | 15.4" WXGA Non Glare |
| Vendor | Samsung LCD |
| Resolution | 1,280 x 800 pixel |
| Colors | 262,144 colors |
| Viewing angle | Left 40° / Right 40° / Up 15° / Down 30° |
| Dot pitch | 0.25875 x 0.25875 mm (Horizontal x Vertical) |
| Contrast ratio | Typical 500 CR |
| Brightness | Typical 200 cd/m2 |
| Response time | Typical 16 ms / max.25 ms |
| Polarizer | Non Glare |
| Weight | Max. 570 g |
| LCD 3 | 15.4" WXGA Non Glare |
| Vendor | Samsung LCD |
| Resolution | 1,280 x 800 pixel |
| Colors | 262,144 colors |
| Viewing angle | Left 40° / Right 40° / Up 10° / Down 30° |
| Dot pitch | 0.25875 x 0.25875 mm (Horizontal x Vertical) |
| Contrast ratio | Typical 500 CR |
| Brightness | Typical 220 cd/m2 |

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| Processor and Motherboard | Description |
|----------------------------------|--|
| Response time | Typical 8 ms / max.16 ms |
| Polarizer | Non glare |
| Weight | Max. 565 g |
| Graphics | |
| Interface | PCI Express 16x, DirectX 10 support |
| Graphic Controller | [Internal Graphic] Cantiga-GM [External Graphic] NB9P GE - GeForce 9600M GS (In case of intel PM45) |
| Video Memory | [Internal Graphic] Shared Memory 32MB ~ Max 256MB [External Graphic] GDDR3 256MB, GDDR3 512MB (In case of intel PM45) |
| Ext. Port | VGA (Dual Independent Display) HDMI (DVI Supported with HDMIto DVI Cable) HDCP (High Bandwidth Digital Content Protection) |
| Ext. CRT Resolution | Upto 1,920x1,440 : 32-bit true color EDID (Extended Display Identity Data, According to support output ratio of monitor 4:3 and 16:10 etc.) |
| Audio | |
| Sound | |
| Codec | Intel® HD (High Definition) audio codec |
| Chipset | REALTEK ALC262-VC2-GR |
| Conversion | Built-in high performance 20 bit ADC & 24 bit DAC |
| Sound effect | EDS (Enhanced Digital Sound) |
| Internal interfaces | Embedded stereo speakers & integrated mono microphone |
| Speaker power rating | 2 speakers x 1.5 W with enclosure |
| External interfaces | Headphone-out, microphone-in |
| Controls | Keyboard volume control |
| Microphone | |
| Type | 1 integrated mono microphone |
| Sensitivity | -40±3 dB |
| Output impedance | Max. 2,200 Ohm |
| Noise suppression | Noise suppression |
| Storage | |
| Hard disk drive 1 | |
| Vendor | HGST, Fujitsu, Samsung Storage, Toshiba , WD |
| Type | 9.5 mm Height 2.5" S-ATA |
| Speed | 5,400 rpm |
| Average seek time | Read max. 14 ms, write max. 15 ms |
| Supports | SATA II 3.0Gbit , SataI 1.5Gbit/s |
| Capacity | 80 GB 120 GB 160 GB 200 GB 250 GB 320 GB |

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|----------------------------------|--|
| Hard disk drive 2 | |
| Vendor | HGST, Fujitsu |
| Type | 9.5 mm Height 2.5" S-ATA |
| Speed | 7,200 rpm |
| Average seek time | Read max. 16 ms, write max. 17 ms |
| Supports | SATA II 3.0Gbit , Satal 1.5Gbit/s |
| Security | 80 GB 120 GB 160 GB 200 GB |
| Type | NAND flash |
| Memory capacity | 2 GB |
| Feature | ReadyDrive/ReadyBoost Support, AHCI Mode, Intel® Turbo Memory driver |
| Interface | Mini card (PCI-Express) |
| Optical disk drive | |
| DVD-rom 1 | |
| Vendor | Factory Option |
| Vendor | TSST |
| Module type | Fixed 12.7mm Slim |
| Speed | 8x DVD-ROM, 24x RW, 24x CD-R, 24x CD : TSST, TS-L333A |
| Average Access Time | DVD 130ms Typ, CD 130ms Typ |
| Weight | 176g or less |
| S/W Supplied | Cyberlink DVD Solution |
| Security | RPC-II Regional Encoding |
| DVD-rom 2 | |
| Vendor | Factory Option |
| Vendor | TEAC |
| Module type | Fixed 12.7mm Slim |
| Speed | 8x DVD-ROM, 24x RW, 24x CD-R, 24x CD : TSST, DV-28S-V |
| Average Access Time | DVD 130ms Typ, CD 130ms Typ.. |
| Weight | 176g or less |
| S/W supplied | Cyberlink DVD Solution |
| Security | RPC-II Regional Encoding |
| Software supplied | CyberLink DVD Suite |
| Security | RPC-II regional encoding |
| Super multi dual layer 1 | |
| Vendor | TSST |
| Type | 12.7 mm, S-ATA, Fixed type |
| Speed | 5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD |
| Average access time | DVD 130 ms Typ., CD 130 ms Typ. |
| Weight | Max. 165 g |
| Software supplied | CyberLink DVD Suite |
| Security | RPC-II regional encoding |
| Super multi dual layer 2 | |
| Vendor | TEAC |
| Type | Fixed 12.7mm |

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| Speed | 5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD |
| Average access time | DVD 150 ms Typ., CD 140 ms Typ. |
| Weight | Max. 180 g |
| Software supplied | CyberLink DVD Suite |
| Security | RPC-II regional encoding |
| Super multi light scribe 1 | |
| Vendor | TSST |
| Type | 12.7 mm, S-ATA, Fixed type |
| Speed | 5 x DVD-RAM, 8 x DVD±R, 6 x DVD±R DL, 8 x DVD+RW, 6 x DVD-RW, 24 x CD-R/RW, 8 x DVD, 24 x CD |
| Average access time | DVD 130 ms Typ., CD 130 ms Typ. |
| Weight | Max. 165 g |
| Software supplied | CyberLink DVD Suite |
| Security | RPC-II regional encoding |
| Network communication | |
| Fax / Modem | |
| Type | 56 Kbps / V.92 Modem (F.Option) |
| Chipset | SV92A3 |
| Interface | RJ11 output |
| LAN | |
| Type | 10/100/1000 Ethernet |
| Chipset | Boazman(82567V, 82567LM) |
| Interface | RJ45 output |
| Feature | |
| Wireless LAN 1 | |
| Type | Intel® 802.11a/b/g/n |
| Interface | Mini card type |
| Chipset | Intel® WiFi Link 5300 |
| Antenna | 3 integrated (Main, AUX, MIMO) |
| Feature | |
| Wireless LAN 2 | |
| Type | Intel® 802.11a/b/g/n (11a/b/g for Russia, Ukraine, Pakistan) |
| Interface | Mini card type |
| Chipset | Intel® WiFi Link 5100 |
| Antenna | 2 integrated (Main, AUX) |
| Feature | |
| Bluetooth | |
| Type | Bluetooth V2.0 + EDR (Enhanced Data Rate) |
| Interface | USB daughter card type with integrated PIFA (Plane Inverted F Antenna) |
| Chipset | Broadcom BCM2045 |
| Ports and interfaces (Input / output) | |
| PC card slot 1 | |
| Type | PCMCIA |
| Chipset | Ricoh R5C847 |

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| Processor and Motherboard | Description |
|-----------------------------------|--|
| Support | PCMCIA I, II type |
| Memory card slot | YES |
| Type | 3-in-1 Multi-memory Card Slot |
| Support | SD / SDHC / MMC |
| Dock port | YES |
| Type | P-Dock port [P-Dock Option Product] |
| Model Code | AA-RD0NDOC |
| Feature | USB2.0 x 5, PS/2, DVI, VGA, RJ45, SIO, E-SATA, Display Port(option), Mic-in jack, Headphone jack |
| Input / output ports | |
| VGA | Yes (15 pin) |
| S-Video (TV-out) | No |
| HDMI | Yes |
| Headphone-out | Yes |
| Microphone-in | Yes |
| USB | 4 x USB 2.0 |
| SIO | Yes |
| IEEE1394 | No |
| RJ11 (Modem) | Yes (F.Option) |
| RJ45 (LAN) | Yes |
| TV antenna | No |
| DC-In (power port) | Yes (5 pie) |
| Input devices | |
| Keyboard | Yes |
| - Amount of keys | 88 (KOR, RUS, UKR, US) 89 (UK, FR, GM, SP) |
| - Feature | Travel length 2.6 mm, key pitch 19.05 mm |
| - Silver Nano Technology | Yes |
| - Fast function keys (EZ BLU) | F7 (Magic Doctor), F8 (SpeedUp Manager) |
| Touchpad | Synaptics touchpad (plat type with scroll area) |
| Button | Power On |
| LED indicator | Power, AC-in / battery, HDD, num-lock, caps-lock, scroll-lock, wireless antenna |
| Multimedia | |
| Integrated digital camera | |
| Type | 1.3M Web-Cam |
| Chipset | GD-5931A/B (D-MAX) |
| Image sensor | Color CMOS SXGA (1.3 Mpixel) |
| SCAN mode | Progressive |
| Still image capture resolution | SXGA (1,280 x 1,024), VGA (640 x 480), CIF (352 x 288) |
| Video capture resolution | VGA (640 x 480) |
| Digital video capture speed | Max. 30 frame |
| Focus | Min. 50 cm ~ infinity |
| UVC support | USB video class 1.0 standard compliant |
| Power and power management | |

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| <i>Processor and Motherboard</i> | <i>Description</i> |
|----------------------------------|---|
| System power management | |
| Power management features | ACPI 1.0b support, standby (S3), hibernate (S4) |
| Standard battery | |
| Model code | BA43-00150A Sanyo (1'st) BA43-00149A SDI (2'nd) |
| Details of cell | 6 cells |
| Battery capacity | 5,200 mAh |
| Voltage | 11.1 V |
| Battery rating | 57.72 Wh |
| Color | Black |
| Dimension | 204 x 48.05 x 21.4 mm (W x H x D) |
| Weight | Max. 350 g |
| Recharge time | Approx. 2 hours |
| Battery life (DVD play mode) | Typ. 2.6 hours |
| - Test program | PowerDVD(Max Batttery Mode) |
| - Test condition | Multimedia M0de, LCD Brightness-Level 4, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium |
| Battery life (Bench mark mode) | Max. 3.7 hours |
| - Test program | BatteryMark v.4.0.1 |
| - Test condition | Samsung Optimized mode, LCD Brightness-Minimum, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium |
| Long-life battery | |
| Model code | AA-PL2NC9B |
| Details of cell | 9 cells |
| Battery capacity | 7,800 mAh |
| Voltage | 11.1 V |
| Battery rating | 86.58 Wh |
| Color | Black |
| Dimension | 204 x 67 x 21.4 mm (W x H x D) |
| Weight | Max. 470 g |
| Recharge time | Approx. 3.2 hours |
| Battery life (DVD play mode) | Typ. 4.0 hours |
| - Test program | PowerDVD (Max Batttery Mode) |
| - Test condition | Mutimedia Mode, LCD Brightness-Level 4, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium |
| Battery life (Bench mark mode) | Max. 5.7 hours |
| - Test program | BatteryMark v.4.0.1 |
| - Test condition | Samsung Optimized mode, LCD Brightness-Minimum, WLAN R/F Off, discharged by 3% T9400(2.53GHz), DDR3 1GB, 15.4" WXGA(200nits), NB9P-GS(512MB), 80GB, DVD-Multi, Vista Home Premium |
| AC adapter 1 | |
| Model code | AD6016 |
| Output power | 60 W |
| Dimension | 107.9 x 46.5 x 28 mm (W x H x D) |

2. Introduction and Specification

| Processor and Motherboard | Description |
|----------------------------------|---|
| Weight (AC Adapter) | Max. 295 g |
| Worldwide compatibility | Auto-sensing 100-240 VAC |
| Line frequency | 50 Hz / 60 Hz |
| Adapter rating (input) | 100 VAC ~ 240 VAC, 1.8 A |
| Adapter rating (output) | 19.0 VDC, 3.16 A |
| AC Adapter 2 | |
| Model Code | AA-PA1N90W |
| Output Power | 90 W |
| Dimension | 126 x 50 x 30 mm (W x H x D) |
| Weight (AC Adapter) | 430g (Max.) |
| Worldwide Compatibility | Auto-sensing 100 - 240 VAC |
| Line Frequency | 50 Hz / 60Hz |
| Adapter Rating - Input | 100 VAC ~ 240 VAC, 1.5A |
| Adapter Rating - Output | 19.0 VDC, 4.74 A |
| System dimensions | |
| Dimensions (W x D x H) | 358.3 x 269.2 x 30.8 (min) ~ 36.5 (max.) mm (14.1" x 10.6" x 1.21" (min) ~ 1.44" (max.) inch) |
| Weight | 2.67Kg (5.89lbs) (With Weight saver : 2.53Kg (5.58lbs)) |
| - Condition | (with battery) |
| Package dimensions (W x D x H) | 425 x 110 x 405 mm |
| Package weight | 4.34 Kg |
| - Condition | Status : supermulti , 6cell battery, 2.5" 80GB 2 platter HDD with Bundle items |
| Materials & Design | |
| - LCD Back | PC/ABS |
| - LCD Front | PC/ABS |
| - System Top | PC/ABS |
| - System Bottom | PC/ABS |
| Installed software | |
| Operating system | Genuine Windows Vista® Home Premium SP1 |
| Software | Samsung Recovery Solution III (optional), Samsung Magic Doctor, Samsung Update Plus Easy Display Manger, Easy Battery Manager, Easy Network Manager, Easy SpeedUp Manager McAfee SecurityCenter, Adobe Acrobat Reader, Microsoft® Office Professional 2007 (free 60-day trial) |

2. Introduction and Specification

2-3. Comparing product specifications

| | Lisbon (Standard Model) | P560 (Development model) |
|----------------|---|---|
| Feature |  |  |
| CPU | 667/800MHz Intel Core 2 Duo Processor (Merom) | 800MHz/1066MHz Intel Core 2 Duo Processor (Penryn) |
| Chipset | GM965 | Intel GM45 / PM45 |
| Memory | DDR2 512MB ~ 4G | DDR3 1G ~ 4G |
| Graphic | Nvidia GF Go 8400 w/ 128MB Nvidia GF Go 8600 w/ 256MB | nVIDIA NB9P Series w/ 256MB & 512MB |
| LCD | 15" SXGA+, Non-Glare | 15.4" WXGA / WSXGA+, Glare / Non-Glare |
| HDD | SATA | SATA |
| ODD | PATA 12.7mm | SATA 12.7mm |
| Port | VGA, PCMCIA, 6-in-1 | VGA, HDMI, PCMCIA, 3-in-1 |


2. Introduction and Specification

2-4. Comparing product specifications jataasa

| Model | Toshiba Tecra S5 | HP Compaq 6710b | Sony VAIO FZ21Z | Dell Latitude D830 | Lenovo ThinkPad T61 |
|----------|---|---|---|---|---|
| Feature |  |  |  |  |  |
| CPU | Intel Core 2 Duo | Intel Core 2 Duo | Intel Core 2 Duo | Intel Core 2 Duo | Intel Core 2 Duo |
| Memory | 2 GB | 1 GB | 2 GB | 2 GB | 2 GB |
| HDD | 160 GB SATA 5400rpm | 120 GB SATA 5400rpm | 300 GBSATA 4200rpm | 120 GB SATA 5400rpm | 160 GB SATA 5400rpm |
| ODD | DVD-Multi | DVD-Multi | BluRay-RE | DVD-Multi | DVD-Multi |
| Display | 1680 x 1050 (WSXGA+) | 1680 x 1050 (WSXGA+) | 1280 x 800 (WXGA) | 1920 x 1200(WUXGA) | 1680 x 1050 (WSXGA+) |
| Graphic | NVIDIA Quadro NVS 130M (256MB) | Intel GMA X3100 | NVIDIA GeForce 8600M GS (256MB) | nVidia Quadro NVS 140M | NVIDIA Quadro NVS 140M (128MB) |
| Network | 802.11abgnBluetooth 2.0+EDR | 802.11abgBluetooth 2.0+EDR | 802.11abgnBluetooth 2.0 | 802.11abg Bluetooth 2.0+EDR | 802.11abgn |
| Security | Fingerprint recognition | TPM, Fingerprint recognition | - | - | TPM, Fingerprint recognition |
| Battery | - | 5.2 Cell | - | 5 Cell | 5.5 Cell |




2. Introduction and Specification

2-5. Option Material List

| HDD | | |
|---|-----------------------|---------------------------------|
|  | | |
| BA59-02355A | HM320JI | 5400RPM, 160G/P, 320G, SATA, 8M |
| BA59-02354A | HM251JI | 5400RPM, 160G/P, 250G, SATA, 8M |
| BA59-02347A | MHZ2320BH-G2 | 5400RPM, 160G/P, 320G, SATA, 8M |
| BA59-02346A | MHZ2250BH-G2 | 5400RPM, 160G/P, 250G, SATA, 8M |
| BA59-02345A | MHZ2200BH-G2 | 5400RPM, 160G/P, 200G, SATA, 8M |
| BA59-02344A | MHZ2160BH-G2 | 5400RPM, 160G/P, 160G, SATA, 8M |
| BA59-02343A | MHZ2120BH-G2 | 5400RPM, 160G/P, 120G, SATA, 8M |
| BA59-02286A | MK1246GSX | 5400RPM, 125G/P, 120G, SATA, 8M |
| BA59-02226A | WD1200BEVS-22UST0 | 5400RPM, 125G/P, 120G, SATA, 8M |
| BA59-02202A | HTS542512K9A300 | 5400RPM, 125G/P, 120G, SATA, 8M |
| BA59-02189A | HM121HI | 5400RPM, 160G/P, 120G, SATA, 8M |
| BA59-02208A | MHY2120BH | 5400RPM, 125G/P, 120G, SATA, 8M |
| BA59-02287A | MK1646GSX | 5400RPM, 125G/P, 160G, SATA, 8M |
| BA59-02279A | WDC-WD1600BEVT-22ZCT0 | 5400RPM, 160G/P, 160G, SATA, 8M |
| BA59-02227A | WD1600BEVS-22RST0 | 5400RPM, 80G/P, 160G, SATA, 8M |
| BA59-02187A | HM160HI | 5400RPM, 160G/P, 160G, SATA, 8M |
| BA59-02203A | HTS542516K9A300 | 5400RPM, 125G/P, 160G, SATA, 8M |
| BA59-02209A | MHY2160BH | 5400RPM, 125G/P, 160G, SATA, 8M |
| BA59-02290A | MK2046GSX | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02210A | MHY2200BH | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02210A | MHY2200BH | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02204A | HTS542520K9A300 | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02204A | HTS542520K9A300 | 5400RPM, 125G/P, 200G, SATA, 8M |
| BA59-02288A | MK2546GSX | 5400RPM, 125G/P, 250G, SATA, 8M |
| BA59-02228A | WD2500BEVS-22UST0 | 5400RPM, 125G/P, 250G, SATA, 8M |
| BA59-02211A | MHY2250BH | 5400RPM, 125G/P, 250G, SATA, 8M |
| BA59-02205A | HTS542525K9A300 | 5400RPM, 125G/P, 250G, SATA, 8M |
| BA59-02190A | HM250JI | 5400RPM, 160G/P, 250G, SATA, 8M |
| BA59-02280A | WDC-WD3200BEVT-22ZCT0 | 5400RPM, 160G/P, 320G, SATA, 8M |


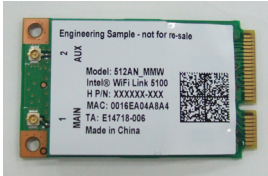

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| LCD | | |
|---|------------------|---|
|  | | |
| BA59-02170A | LTN154P4-L02-0 | 15.4"WSXGA+(High Bright, 200nit Gloss) |
| BA59-02276A | LTN154P3-L04-0 | 15.4" WSXGA+(High Bright, 200nit Gloss) |
| BA59-02275A | LTN154AT07-8 | 15.4" WXGA(High Bright, 200nit Gloss) |
| BA59-02350A | LTN154AT10-8 | 15.4" WXGA(High Bright, 220nit Gloss) |
| MEMORY | | |
|  | | |
| 1105-001923 | M471B2874DZ1-CF8 | 1GB (DDR3 1066MHz/1G*1) |
| 1105-001921 | M471B5673DZ1-CF8 | 2GB (DDR3 1066MHz/2G*1) |
| CPU | | |
|  | | |
| 0902-002337 | T2_P8600 | 2.4 GHz, 1066 MHz, 3 MB, 25 W |
| 0902-002336 | T2_T9400 | 2.53 GHz, 1066 MHz, 6 MB, 35 W |
| 0902-002342 | T2_T9600 | 2.8 GHz, 1066 MHz, 6 MB, 35 W |
| 0902-002341 | T2_P8400 | 2.26 GHz, 1066 MHz, 3 MB, 25 W |
| 0902-002340 | T2_P9500 | 2.53 GHz, 1066 MHz, 6 MB, 25 W |
| 0902-002331 | T2_T5870 | 2.0 GHz, 800 MHz, 2 MB, 35 W |
| 0902-002330 | T2_T5670 | 1.8 GHz, 800 MHz, 2 MB, 35 W |
| 0902-002356 | T2_P7350 | 2.0 GHz, 90 MHz, 3 MB, 25 W |

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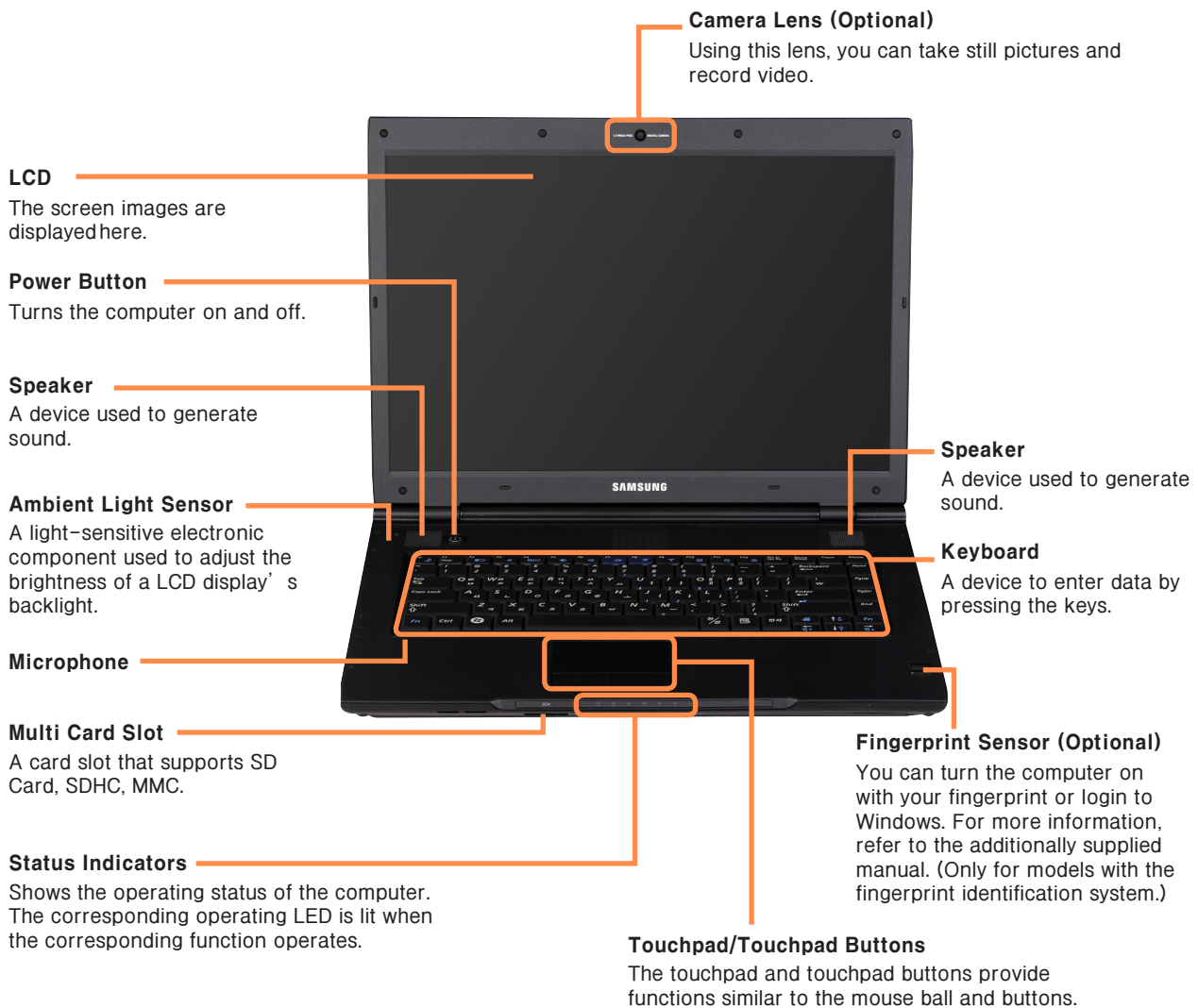
| ODD | | |
|---|------------|----------------------------|
|  | | |
| BA96-03666A | TEAC | DVD-ROM |
| BA96-03667A | TSST | DVD-ROM |
| BA96-03665A | TSST | Super Mul |
| BA96-03670A | TEAC | Super Mul |
| BA96-03671A | TSST | Super Mul |
| WLAN | | |
|  | | |
| BA59-02273A | | Intel Shirley Peak 3x3 AGN |
| BA59-02297A | | Intel Shirley Peak 1x2 AGN |
| BLUE TOOTH | | |
|  | | |
| BA59-01691A | T60H928.01 | Bluetooth V2.0, FOXCONN |
| BA59-01916A | BTO2P0B2SA | Bluetooth V2.0, SEM |

2. Introduction and Specification

2-6. Function of Product

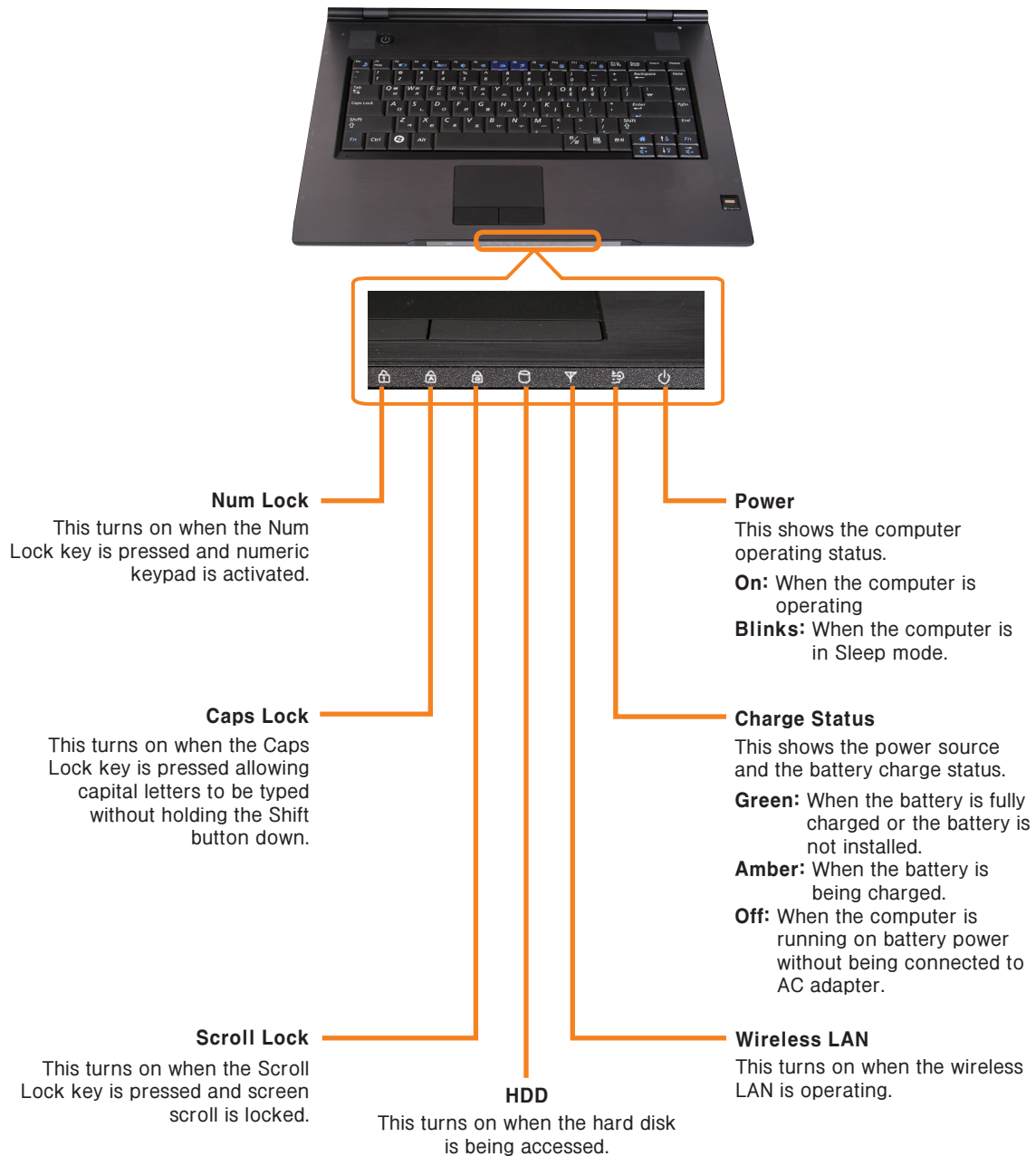
2-6-1. Overview

Front View



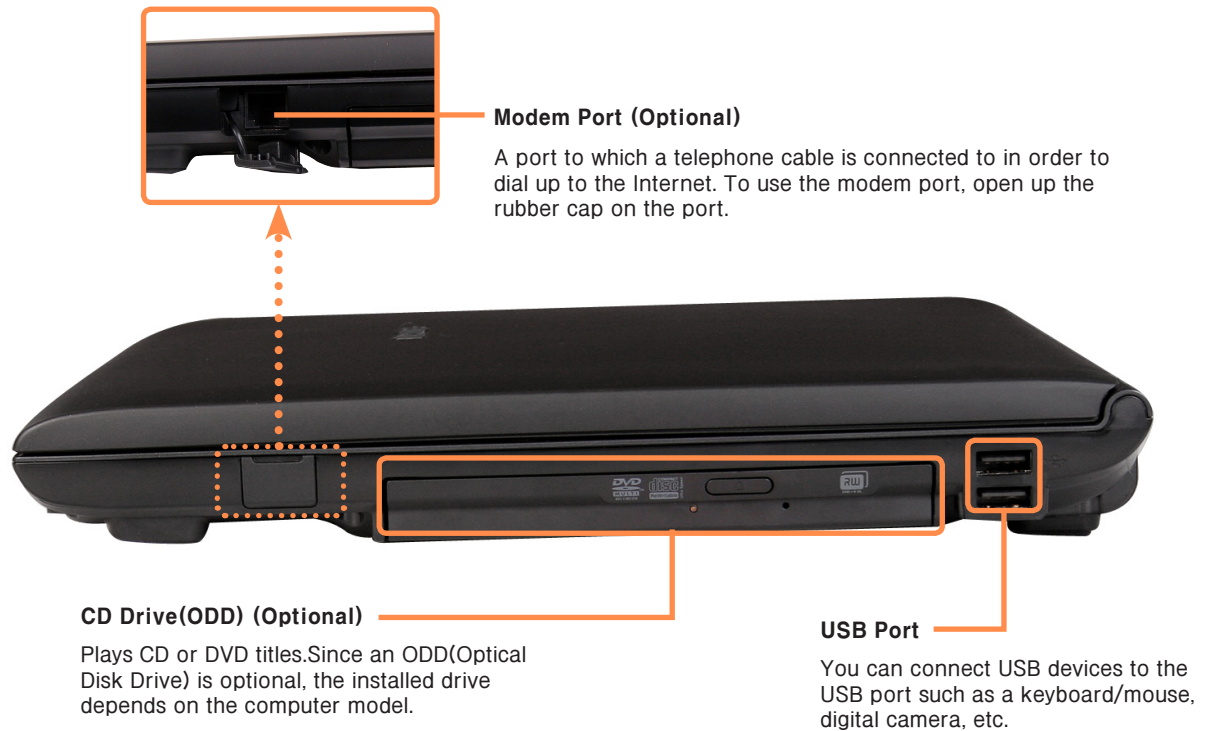
2. Introduction and Specification

Status Indicators



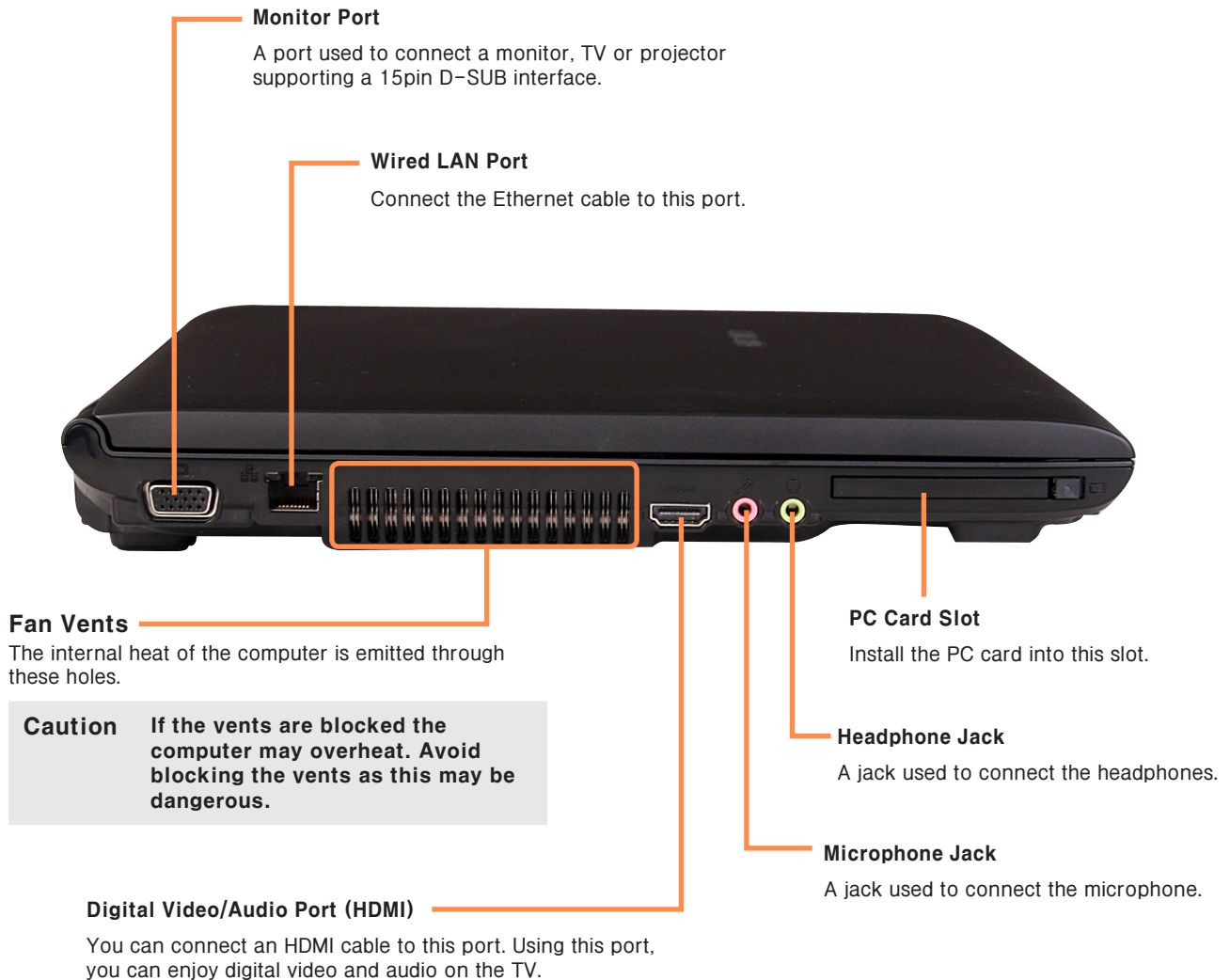
2. Introduction and Specification

Right View



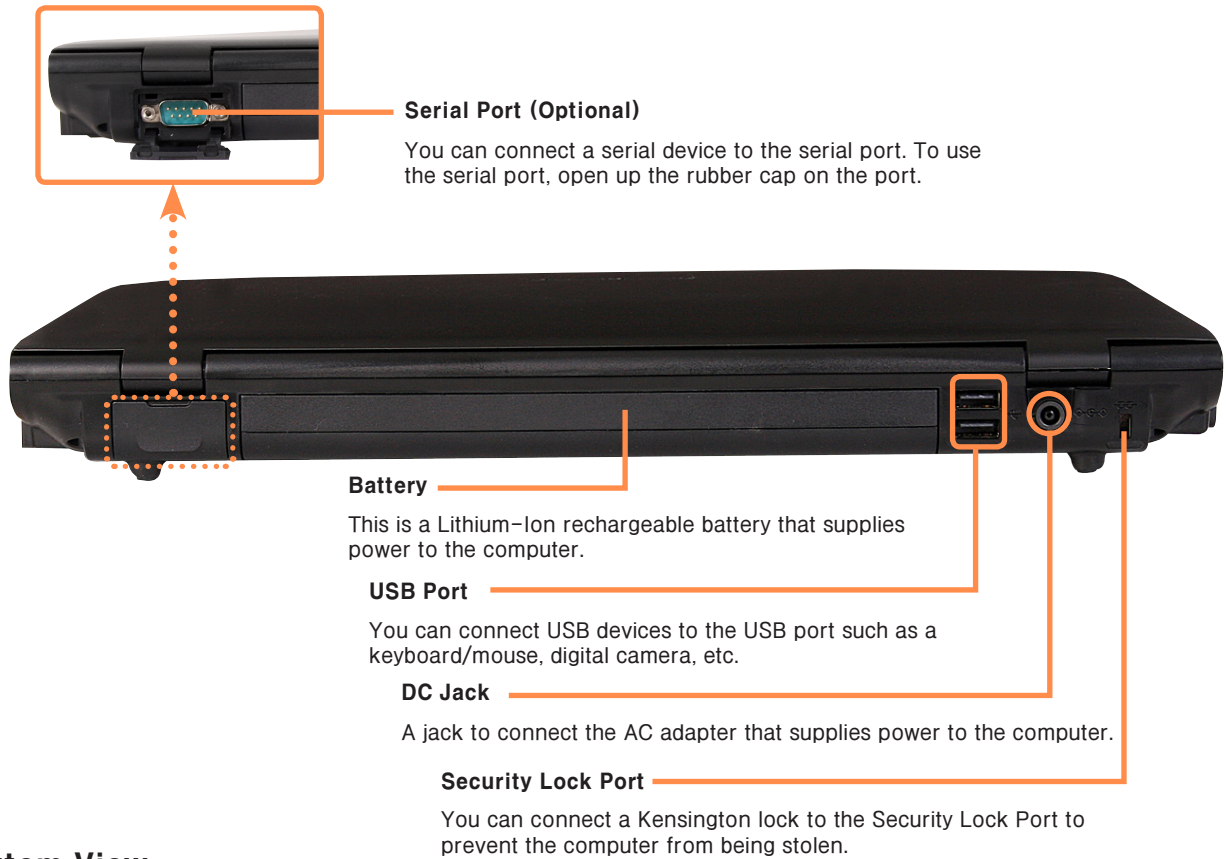
2. Introduction and Specification

Left View

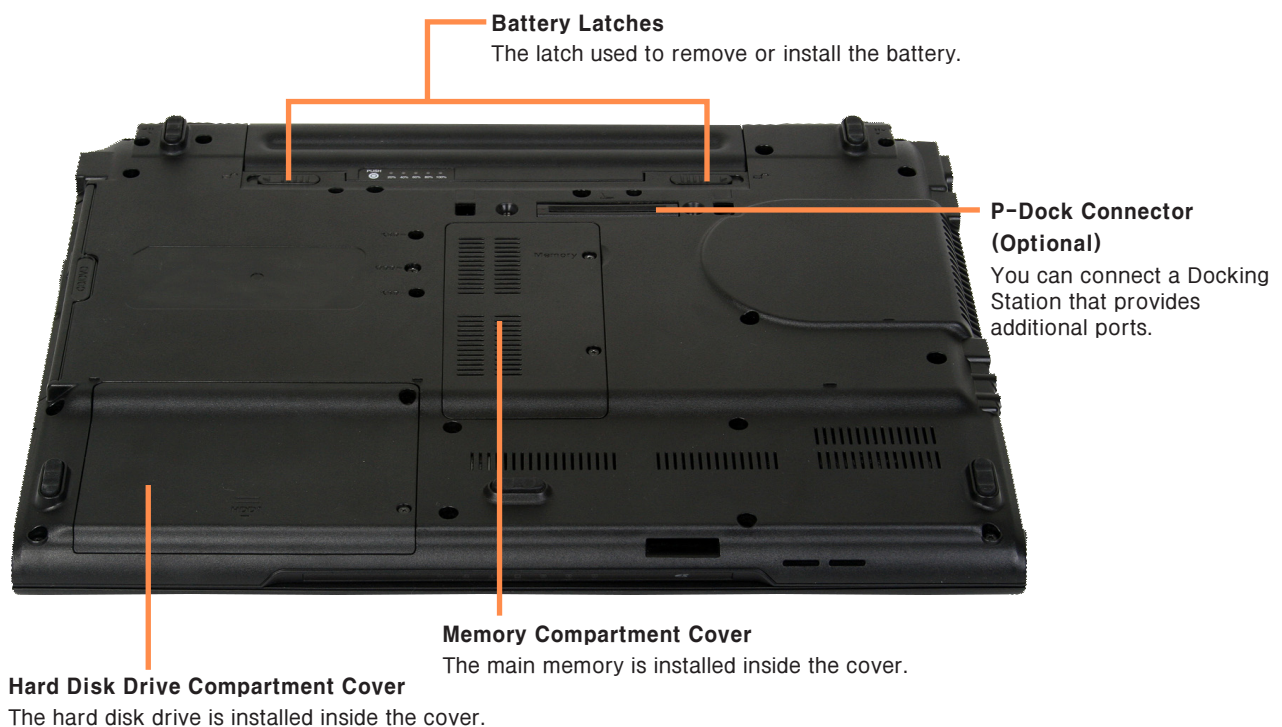


2. Introduction and Specification

Back View



Bottom View



2. Introduction and Specification

2-6-2. New Added Function

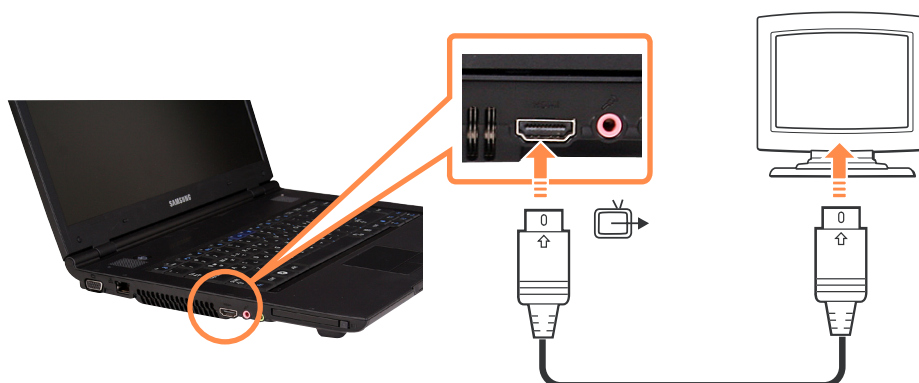
Camera (Option)

Easy use of taking a picture and moving image.



HDMI Port

Convenient connection with MONITOR through HDMI port.






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2. Introduction and Specification

HD-DVD, Blue-Ray

The existing DVD HD-DVD can store more data in the next-generation storage devices, much sharper than the existing HD DVD movies, SD-class save, and you can enjoy.

| Type | HD DVD | DVD | CD |
|----------------------|---|---|---|
| Logo |  |  |  |
| Storage Capacity | 15GB / 30GB | 4.7GB / 8.5GB | 0.65GB |
| Data Rate | 36.55 Mbps | 11.08 Mbps | 7.8 Mbps |
| Supported Resolution | 1920 x 1080(i) | 720 x 480 | 320 x 240 |




Date Rate : The amount of data that can be read or written onto a storage media per second.

Supported Disk Types

HD DVD supports the nfollowing disk types.

| Type | Function |
|------------|--|
| HD DVD-ROM | Reads HD DVD disks. |
| HD DVD-R | Reads HD DVD disks and writes data onto HD DVD disks once. |
| HD DVD-RW | Reads and writes to rewritable HD DVD media. |

Blu-Ray is a next generation storage media that can save approximately 5 to 10 times more data than the existing DVD format. You can record and play better quality HD movies than the existing SD-grade DVD format.

| Type | Blu-Ray | DVD | CD |
|----------------------|---|---|---|
| Logo |  |  |  |
| Storage Capacity | 25GB / 50GB | 4.7GB / 8.5GB | 0.65GB |
| Data Rate | 36 Mbps | 11.08 Mbps | 7.8 Mbps |
| Supported Resolution | 1920 x 1080(i) | 720 x 480 | 320 x 240 |

Date Rate : The amount of data that can be read or written onto a storage media per second.

Supported Disk Types

Blu-Ray supports the nfollowing disk types.

| Type | Function |
|--------|--|
| BD-ROM | Reads Blu-Ray disks. |
| BD-R | Reads Blu-Ray disks and writes data onto Blu-Ray disks once. |
| BD-RE | Reads and writes to rewritable Blu-Ray media. |

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2. Introduction and Specification

New Keyboard



Shortcut Keys



You can use the following functions by pressing the keys below with the Fn key.





| Fn+ | Name | Function |
|-----|-----------------------------|---|
| | REST(Sleep Mode) | Switches to Sleep mode. To wake the computer up, press the Power button. |
| | Gauge | Shows the remaining battery charge. You can only use this function when the Easy Display Manager program is installed. |
| | Euro | Enters the Euro monetary unit symbol. This key may not be provided depending on the keyboard type. |
| | CRT/LCD | Switches the screen output to the LCD or external monitor when an external monitor (or TV) is connected to the computer. |
| | Backlit | Turns the LCD backlight on or off. |
| | Mute | Mutes or cancels mute. |
| | Samsung Magic Doctor | System diagnosis, recovery and Internet consultation program, Samsung Magic Doctor, will be launched. |
| | Easy SpeedUP Manager | You can select operation mode when you need maximum system performance or low-noise/low power consumption with one-click. Silent : Low-noise and low power consumption mode Normal : Normal Mode Speed : Maximum performance mode. The system operates in its maximum performance, and system resources are allocated to the currently active program with priority for maximum performance. |
| | Wireless LAN | Turns the wireless LAN function on or off in models with wireless LAN capability. |
| | Touchpad | Turns the Touchpad function on or off. When using an external mouse only, you can turn the Touchpad off. |

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2. Introduction and Specification

| | | |
|---|--------------------|---|
|  | Num Lock | Turns the numeric keyboard on or off. |
|  | Scroll Lock | If you turn the Scroll Lock on, you can scroll the screen up or down without changing the cursor location in some applications. |


Screen Brightness Control

To adjust the LCD brightness press the **Fn** +  key combination or the **Fn** +  key combination. The changed screen brightness is displayed at the center of the screen for a moment.

Volume Control

To control the volume, press the **Fn** +  key combination or the **Fn** +  key combination. You can mute the sound or cancel the mute function by clicking the **Fn** +  key combination.

Numeric Key

The numbers are printed in blue on the numeric keys. If Num Lock is turned on by pressing the **Fn** +  key combination, you can use the numeric keys to enter digits.

Other Function Keys

Application Key

Performs the right-click mouse function (touchpad).

Internet Explorer Quick Launch Key : (Fn+)

Launches Internet Explorer.

2. Introduction and Specification

2-7. SW List

| Item | | Specification | Ver | Comment |
|-------------|-----------------------------|-----------------------------------|--------------|---------|
| OS | Vista | Vista Home Premium 32Bit SP1 | | New |
| Driver | Chipset | Montevina PM45 + ICH9M | 8.7.0.1007 | New |
| | Graphic Driver | Intel GM45 (Internal) | 7.15.10.1481 | New |
| | | Nvidia GeForce 9600M GS(External) | | |
| | Wireless LAN Driver (Intel) | 3965ABG | 12.0.0.78 | New |
| | Sound Driver | ALC262-GR | 6.0.1.5605 | |
| | Bluetooth Driver | Bluetooth Driver | 6.0.1.6300 | |
| | Touchpad Driver | Touchpad Driver | 10.1.2.0 | |
| | Modem Driver | Delphi V92 | 2.1.88 | |
| | LAN Driver | Boazman | 9.51.4.0 | |
| | Camera Driver | Demax Camera Driver | 6.11.706.13 | New |
| | Intel Turbo Memory Driver | Intel Turbo Memory Driver | 1.6.1.1004 | New |
| Application | | Adobe Reader | 8.1.0.137 | |
| | | Easy Battery Manager | 3.2.1.7 | New |
| | | Easy Display Manager | 2.2.6.0 | New |
| | | Easy Network Manager | 4.0.0.12 | |
| | | Easy Partition Manager | 2.2.2.2 | |
| | | Easy Speed Up Manager | 2.0.1.0 | |
| | | Intel Turbo Memory Console | 1.6.1.1004 | |
| | | McAfee VirusScan | 8.0.226.0 | |
| | | Ms Office 2007 Ready | 1.2 | |
| | | Play Camera | 2.0.0.12 | New |
| | | Recovery Solution III | 3.0.0.5 | New |
| | | Samsung Magic Doctor5 | 5.0.3.3 | |
| | | Samsung Update Plus | 1.3.0.12 | |
| | | Samsung Screen Saver | 1.0.2.0 | |
| | | Samsung Wall Paper | 2.0.0.0 | |

2. Introduction and Specification

2-8. System Setup (BIOS Setup)

MAIN

SATA Port 1

- HDD model name is displayed in this item for SATA Port 1.

SATA Port 2

- HDD model name is displayed in this item for SATA Port 2.

Total Memory

- Total memory size of the system.

Slot 1 Memory

- Memory size of the slot 1.

Slot 2 Memory

- Memory size of the slot 2.

| Phoenix SecureCore(tm) Setup Utility | | | | | |
|---|----------------|-------------------------|-----------|------|--|
| Main | Advanced | Security | TPM State | Boot | Exit |
| System Time [18:06:14] System Date [06/04/2008] ▶ SATA Port 1 [FUJITSU MHY2160BH-(PM)] ▶ SATA Port 2 [TSSTcorp CDWDVD TS-L463A-] CPU Type Intel(R) Core (TM) 2 Duo CPU CPU Speed 2.53 GHz Total Memory 1024 MB Slot1 Memory 1024 MB Slot2 Memory Not Installed Graphics Memory [Auto : Shared] BIOS Version 00LU.TEST.20080520.hkk MICOM Version 00LUPU00 | | | | | Item Specific Help <Tab>, <Shift-Tab>, or <Enter> selects field. |
| F1 Help | ↑↓ Select Item | F5/F6 Change Values | | | F9 Setup Defaults |
| ESC Exit | ←→ Select Menu | Enter Select ▶ Sub-Menu | | | F10 Save and Exit |

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2. Introduction and Specification

Advanced

Intel(R) SpeedStep(TM)

- This selects whether Intel® SpeedStep™ Thchnology is enabled or not.

Legacy USB Support

- Enable support for Legacy Universal Serial Bus.

Large Disk Access Mode

- UNIX, Novell NetWare or other O/S, select 'Other'.

AHCI Mode Control

- Select a AHCI mode always enabled or disabled.

EDB (Execute Disable Bit)

- supports the Data Execution Prevention (DEP) feature. DEP is a set of H/W & S/W technologies that perform additional checks on memory to help prevent malicious code from running on a system.

Internal LAN

- "Enabled" will allow the internal LAN to operate correctly.

Touch Pad Mouse

- 'Disabled' prevents installed Touch Pad mouse from functioning, but frees up IRQ 12. 'Enabled' forces the Touch Pad mouse to be enabled.

CPU Power Saving Mode

- 'Enabled' will decrease system power consumption.

USB S3 Wake-up

- Select Enabled to support that system can be waked up from ACPI S3 state by USB activities.

Purchased Date

- Purchased date is displayed after 10 times boot.

| Phoenix SecureCore(tm) Setup Utility | | | | | | | | | | | |
|---|--|----------------|--|-------------------------|--|-----------|--|--|--|------|--|
| Main | | Advanced | | Security | | TPM State | | Boot | | Exit | |
| <div>Intel (R) SpeedStep (TM) [Enabled]</div> <div>Legacy OS Boot [Enabled]</div> <div>Legacy USB Support [Enabled]</div> <div>Large Disk Access Mode [DOS]</div> <div>AHCI Mode Control [Enabled]</div> <div>EDB (Execute Disable Bit) [Disabled]</div> <div>Internal LAN [Enabled]</div> <div>Touch Pad Mouse [Enabled]</div> <div>CPU Power Saving Mode [Enabled]</div> <div>USB S3 Wake-up [Disabled]</div> <div>► I/O Device Configuration</div> | | | | | | | | <div>Item Specific Help</div> <div>This selects whether Intel (R) SpeedStep (TM) Techhnology is enabled or not.</div> <div>'Disbled' means that system does not support Intel (R) SpeedStep (TM) Technology.</div> <div>'Enabled' is recommened.</div> | | | |
| F1 Help | | ↑↓ Select Item | | F5/F6 Change Values | | | | F9 Setup Defaults | | | |
| ESC Exit | | ←→ Select Menu | | Enter Select ► Sub-Menu | | | | F10 Save and Exit | | | |

2. Introduction and Specification

Security

set Supervisor Password

- Supervisor Password controls access to the setup utility.

set User Password

- User Password controls access to a few items in the setup utility.

set HDD Password

- User can set a password of a HDD.

Password on Boot

- Supervisor Password controls access to system boot.

Fixed Disk Boot Sector

- "Write Protect" will protect to write in Boot Sector of HDD.

| Phoenix SecureCore(tm) Setup Utility | | | | | | |
|--|-------------|----------------------------|----------------------|------|--|--|
| Main | Advanced | Security | TPM State | Boot | Exit | |
| Supervisor Password Clear User Password Clear HDD Password Clear Set Supervisor Password [Enter] Set User Password [Enter] Set HDD Password [Enter] Password on boot [Enabled] Fixed disk boot sector [Normal] TPM Support [Enabled] | | | | | Item Specific Help Supervisor Password controls access to the setup utility | |
| F1 Help ↑↓ | Select Item | F5/F6 Change Values | F9 Setup Defaults | | | |
| ESC Exit ←→ | Select Menu | Enter Select ► Sub-Menu | F10 Save and Exit | | | |

2. Introduction and Specification

TPM State

Security Chip State

- Display the current status of TPM chip.

Change TPM State

- Set the status of TPM chip.

| Phoenix SecureCore(tm) Setup Utility | | | | | | |
|---|----------|----------|-------------|---|-------------------|---|
| Main | Advanced | Security | TPM State | Boot | Exit | |
| Security Chip State Change TPM State | | | | Disabled and Deactivated [No Change] | | Item Specific Help |
| | | | | | | Change TPM State A disabled security chip prevents encrypted data from being used A deactivated security chip prevents a user from taking ownership |
| F1 | Help | ↑↓ | Select Item | F5/F6 | Change Values | F9 Setup Defaults |
| ESC | Exit | ←→ | Select Menu | Enter | Select ► Sub-Menu | F10 Save and Exit |

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2. Introduction and Specification

Boot

Boot Device Priority

- Select system boot options.

NumLock

- Selects Power-on state for Numlock.

Enable Keypad

- Select a method of Keypad.
 - [Only By Fn Key] : Leave the embedded keypad disabled when the Numlock LED is on.
 - [By NumLock] : Enable the embedded keypad when Numlock LED is on and no external keyboard is attached.

Summary Screen

- Display system configuration on boot.

Boot-time Diagnostic Screen

- Display the diagnostic screen during boot.

PXE OproM

- This selects whether network boot PXE will be loaded or not during the POST.
 - [Only with F12] : The network boot PXE will be loaded only if F12 is pressed during the POST.
 - [Always] : The network boot PXE will be always loaded during the POST.

Brightness Control Mode

- [Auto] : The brightness values are set by the status of AC adapter at each bootup.
- [User Control] : The brightness values could be remained regardless of the status of AC adapter.

Wireless Device Control

- [Always On / Off] : The wireless devices are turned on or not.
- [Last Status] : The wireless devices are restored to last status.

Smart Battery Calibration

- If you select this option, the system battery will be discharged completely for more accurate battery level detection.
This option only works with SMART battery.

| Phoenix SecureCore(tm) Setup Utility | | | | | | | | | | |
|--|--|----------|--|--|----------|--|-----------|----------------------------|------|------|
| Main | | Advanced | | | Security | | TPM State | | Boot | Exit |
| <div>▶ Boot Device Priority</div> <div><div>NumLock</div><div>[OFF]</div></div> <div><div>Enble Keypad</div><div>[By NumLock]</div></div> <div><div>Summary screen</div><div>[Disabled]</div></div> <div><div>Boot-time Diagnostic Screen</div><div>[Disabled]</div></div> <div><div>PXE OPRM</div><div>[Always]</div></div> <div><div>Brightness Mode Control</div><div>[Auto]</div></div> <div><div>Wireless Device Control</div><div>[Always On]</div></div> <div><div>Smart Battery Calibration</div><div></div></div> | | | | | | | | Item Specific Help | | |
| | | | | | | | | Select system boot options | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| <div><div>F1</div><div>Help</div><div>↑↓</div><div>Select Item</div><div>F5/F6</div><div>Change Values</div><div>F9</div><div>Setup Defaults</div></div> <div><div>ESC</div><div>Exit</div><div>←→</div><div>Select Menu</div><div>Enter</div><div>Select ▶ Sub-Menu</div><div>F10</div><div>Save and Exit</div></div> | | | | | | | | | | |

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2. Introduction and Specification

Exit

Exit Saving changes

- Exit System Setup and save your changes to CMOS.

Exit Discarding Changes

- Exit utility without saving Setup data to CMOS.

Load Setup Defaults

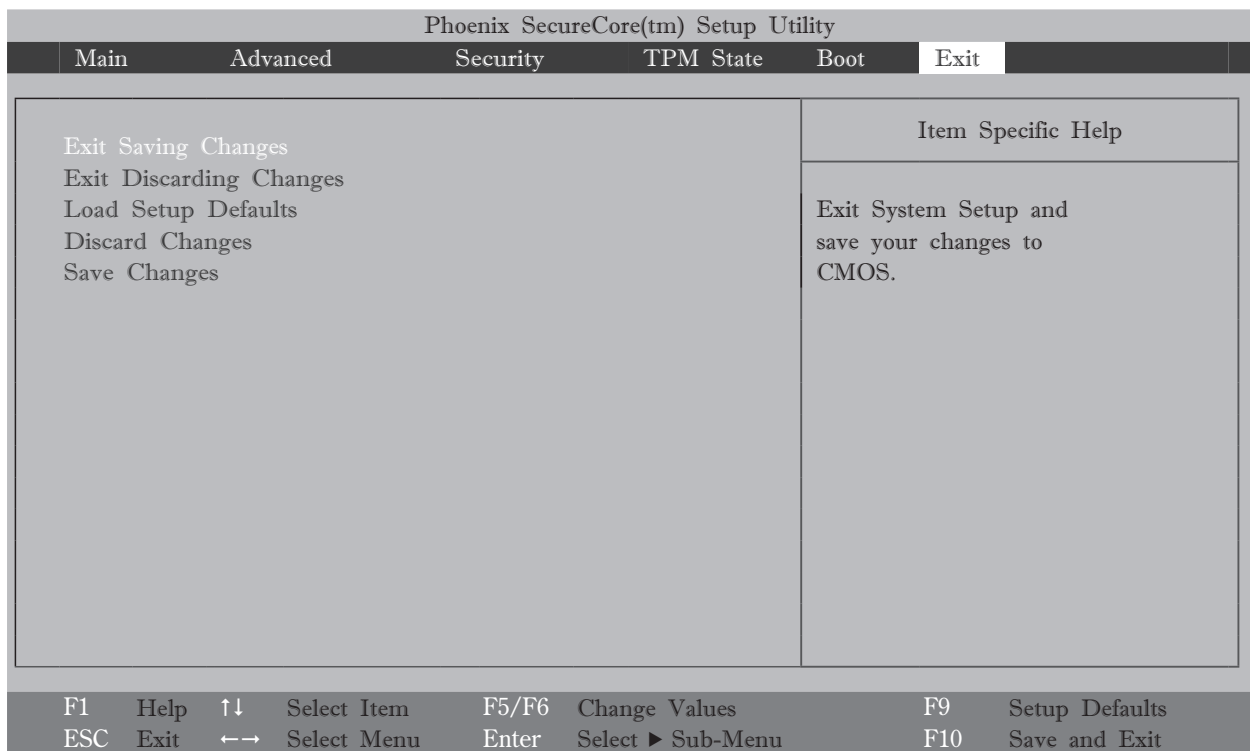
- Load default values for all SETUP items.

Discard Changes

- Load previous values from CMOS for all SETUP items.

Save Changes

- Save Setup Data to CMOS.



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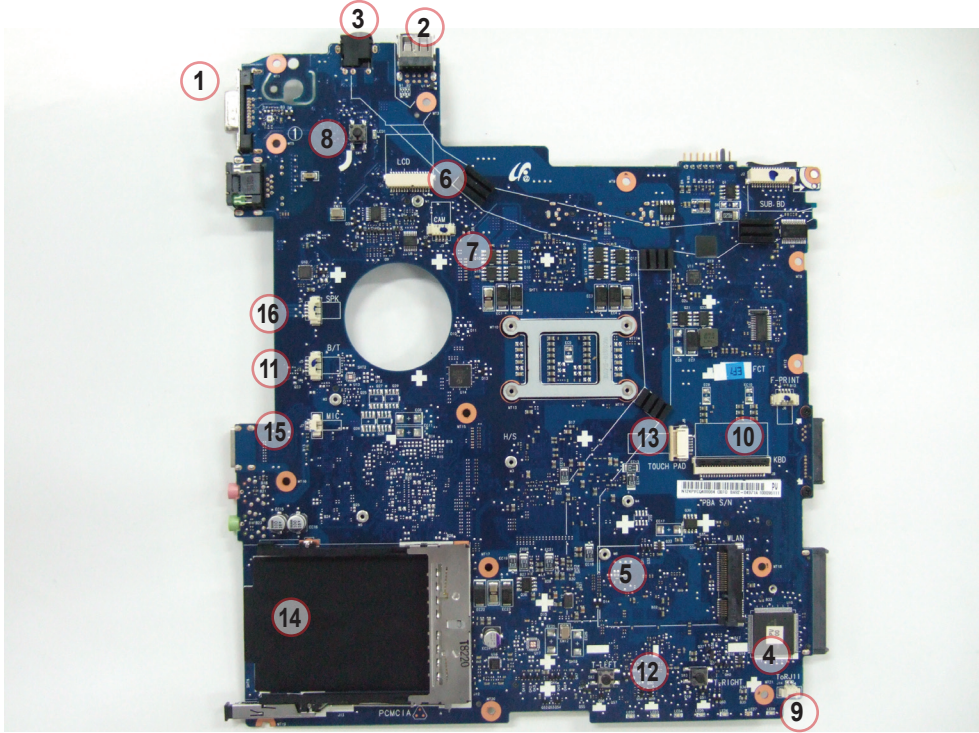
2. Introduction and Specification

BIOS Vendor

BIOS Vendor : **Phoenix**

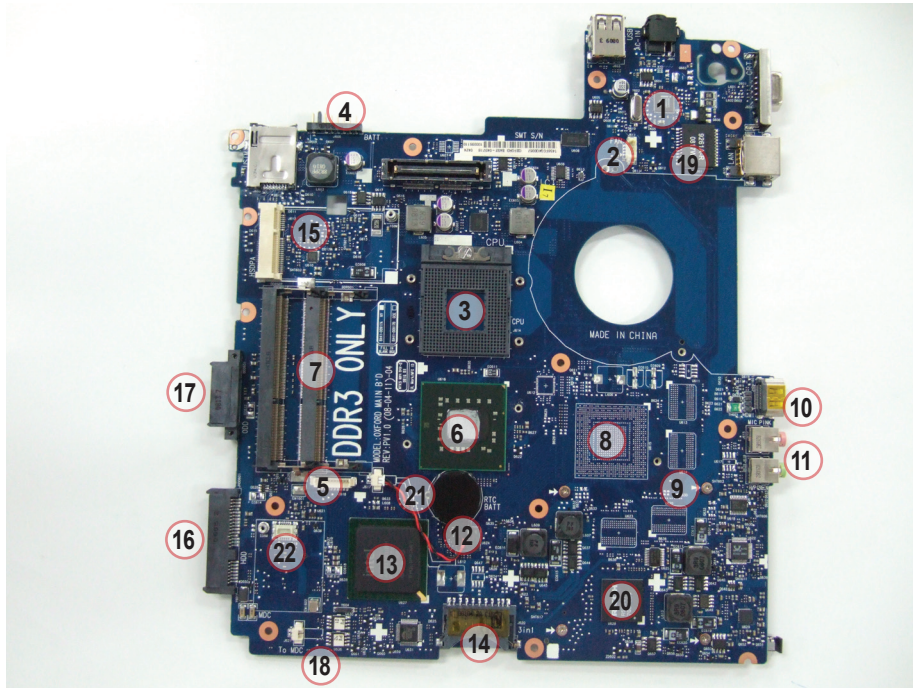
2. Introduction and Specification

2-9. Mainboard Part Description

| TOP | | | |
|---|--------------------------------|----|------------------------------------|
|  | | | |
| 1 | CRT Connector (J604) | 9 | MDC Cable Connector (J14 , Option) |
| 2 | 2-stack USB Connector (J603) | 10 | KBD Connector (J9) |
| 3 | DC-Jack (J601) | 11 | Bluetooth Connector (J5) |
| 4 | MICOM (U15) | 12 | Touchpad button (SW2, SW3) |
| 5 | Minicard Connector (WLAN, J11) | 13 | Touchpad FFC Connector (J8) |
| 6 | LCD Connector (J1) | 14 | PCMCIA Frame (J13) |
| 7 | Camera Connector (J3) | 15 | MIC Connector (J7) |
| 8 | Power switch (SW1) | 16 | Speaker Connector (J4) |

2. Introduction and Specification

Bottom



| | | | |
|----|---------------------------------------|----|-----------------------------------|
| 1 | LAN Controller (U604) | 12 | Clock generator (U623) |
| 2 | FAN Connector (J611) | 13 | ICH9M (U626) |
| 3 | CPU socket (J614) | 14 | 3-in-1 Connector (J620) |
| 4 | Battery Connector (J608) | 15 | Minicard Connector (Robson, J613) |
| 5 | Debug Connector (J618) | 16 | SATA HDD Connector (JHDD601) |
| 6 | MCH (U615) | 17 | SATA ODD Connector (ODD601) |
| 7 | DDR3 Connector (DDR601, 602) | 18 | SPI ROM (U629) |
| 8 | GFX Controller (U614) | 19 | LAN Transformer (LT601) |
| 9 | GDDR3 Memory (U612, U613, U619, J622) | 20 | Multicard Controller (U627) |
| 10 | HDMI Connector (JHDMI601) | 21 | RTC Battery |
| 11 | Headphone, MIC jack (J615, J616) | 22 | MDC card |